

Appl. Serial No. : 10/621,803

Submission under 37 C.F.R. § 1.114 dated August 31, 2005

Reply to Office Action of July 5, 2005

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the Application.

Listing of Claims:

1. (Currently amended) A device for amplifying and detecting a target nucleic acid, comprising:
 - a solid support having a surface;
 - a plurality of at least one species of oligonucleotide amplification primer immobilized substantially uniformly over said surface, thereby defining a field of immobilized primers, said at least one said plurality of species of oligonucleotide amplification primer comprising a first amplification primer that comprises a sequence complementary to a first strand of said target nucleic acid; and
 - a plurality of samples species of labeled hybridization probes immobilized in an array to the solid support within said field of immobilized primers,
 - wherein at least one of [[the]] said plurality of species of labeled hybridization probes immobilized in said array comprising comprises a sequence complementary to an amplicon synthesized using [[a]] said first amplification primer from said field of immobilized primers and said target nucleic acid as a template in a nucleic acid amplification reaction,
 - each of said plurality of samples of labeled hybridization probes in said array being spatially separated from the others, but not spatially separated from said field of immobilized primers
 - wherein no portion of said surface of said solid support is excluded from occupation by an immobilized oligonucleotide, said device having been manufactured by a process comprising immersion of said surface in a liquid composition comprising immobilizable oligonucleotide primers, and
 - wherein each of said plurality of samples of labeled hybridization probes comprising comprises a detectable label prior to contacting said device with any

Appl. Serial No. : 10/621,803
Submission under 37 C.F.R. § 1.114 dated August 31, 2005
Reply to Office Action of July 5, 2005

nucleotide polymerizing enzyme.

2. (Original) The device of Claim 1, wherein said surface comprises a material selected from the group consisting of glass and plastic.

3. (Currently amended) The device of Claim 2, wherein said at least one species of oligonucleotide each of said plurality of species of amplification primer immobilized substantially uniformly over said surface is immobilized covalently.

4. (Currently amended) The device of Claim 2, wherein each of said plurality of samples species of labeled hybridization probes [[are]] is immobilized covalently.

5. (Currently amended) The device of Claim 2, wherein said at least one species of oligonucleotide each of said plurality of species of amplification primer and each of said plurality of samples species of labeled hybridization probes [[are]] is immobilized covalently.

6. (Currently amended) The device of Claim 5, further comprising at least one soluble oligonucleotide amplification primer complementary to an opposite strand of said target nucleic acid, said first strand and said opposite strand of said target nucleic acid being complementary to each other.

7. (Currently amended) The device of Claim 1, wherein each of said plurality of samples species of labeled hybridization probes comprises a plurality of self-reporting probes comprises a fluorophore moiety and a quencher moiety.

8. (Canceled)

9. (Currently amended) The device of Claim 6, wherein [[said]] at least one

Appl. Serial No. : 10/621,803

Submission under 37 C.F.R. § 1.114 dated August 31, 2005

Reply to Office Action of July 5, 2005

of said plurality of species of oligonucleotide amplification primer immobilized substantially uniformly over said surface comprises a promoter sequence for an RNA polymerase.

10-18. (Canceled)

19. (Currently amended) A kit for detecting a target nucleic acid, comprising:
a device in accordance with Claim 1;
a soluble oligonucleotide primer; and
a positive-control nucleic acid amplifiable in a nucleic acid amplification reaction using [[said]] at least one of said plurality of species of oligonucleotide amplification primer immobilized substantially uniformly over said surface in combination with said soluble oligonucleotide primer.

20-31. (Canceled)

32. (New) The device of Claim 1, wherein said plurality of species of labeled hybridization probes comprises no more than two species of labeled hybridization probes.

33. (New) The device of Claim 32, wherein said plurality of species of labeled hybridization probes that comprises no more than two species of labeled hybridization probes comprises no more than a single species of labeled hybridization probe.

34. (New) The device of Claim 33, wherein said plurality of species of amplification primer comprises no more than a single species of amplification primer having a free 3' terminus available for extension by a DNA polymerase activity.

35. (New) The device of Claim 32, wherein said plurality of species of amplification primer comprises no more than a single species of amplification primer having a free 3' terminus

Appl. Serial No. : 10/621,803
Submission under 37 C.F.R. § 1.114 dated August 31, 2005
Reply to Office Action of July 5, 2005

available for extension by a DNA polymerase activity.

36. (New) The device of Claim 32, wherein said solid support is a bead.

37. (New) The device of Claim 32, wherein said surface of said solid support is a planar surface.

38. (New) The device of Claim 1, wherein said plurality of species of amplification primer comprises no more than a single species of amplification primer having a free 3' terminus available for extension by a DNA polymerase activity.

39. (New) A reaction mixture, comprising a liquid composition in contact with said surface of the solid support of the device of Claim 1, said liquid composition comprising a pH buffer, a DNA polymerizing enzyme, and deoxyribonucleotide triphosphate precursors of DNA, wherein each of said plurality of species of amplification primer and each of said plurality of species of labeled hybridization probes immobilized to said surface of said solid support is in fluid communication with the others, there being no physical barrier therebetween.

40. (New) The reaction mixture of Claim 39, wherein said liquid composition further comprises ribonucleotide triphosphate precursors of RNA, and an RNA polymerizing enzyme.

41. (New) The reaction mixture of Claim 40, wherein said RNA polymerizing enzyme is T7 RNA polymerase.

42. (New) The reaction mixture of Claim 39, wherein said DNA polymerizing enzyme is a reverse transcriptase.

Appl. Serial No. : 10/621,803
Submission under 37 C.F.R. § 1.114 dated August 31, 2005
Reply to Office Action of July 5, 2005

43. (New) The reaction mixture of Claim 42, wherein said reverse transcriptase is MMLV reverse transcriptase.